M-200MC

SERVICE MANUAL

Ver 1.1 2002. 01

US Model
Canadian Model
AEP Model
E Model
Chinese Model

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MZ-200MC-99

SPECIFICATIONS

Tape
MICROCASSETTE™ (normal position type)
Recording system
2-track 1-channel monaural
Speaker
Approx. 2.8 cm (1 1/8 in.) dia.
Tape speed
2.4 cm / s (15/16 ips), 1.2 cm / s (15/32 ips)
Frequency range
300 - 4 000 Hz (with TAPE SPEED switch at 2.4 cm)
Output
Earphone jack (minijack) for 8 – 300 Ω earphone
Power output (at 10% harmonic distortion)
250 mW
Power requirements
3 V DC, two R03 (size AAA) batteries / External DC 3V power sources
Dimensions (w/h/d)
Approx. 27.8 × 127 × 69 mm (1 1/8 × 5 × 2 3/4 in.) incl. projecting parts and controls
Mass
Approx. 140 g (5 oz) (main unit only)

Design and specifications are subject to change without notice.

MICROCASSETTE™-CORDER

9-873-133-12
2002A1600-1
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Sony Corporation
Personal Audio Company
Published by Sony Engineering Corporation

SONY®

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Notes on Chip Component Replacement

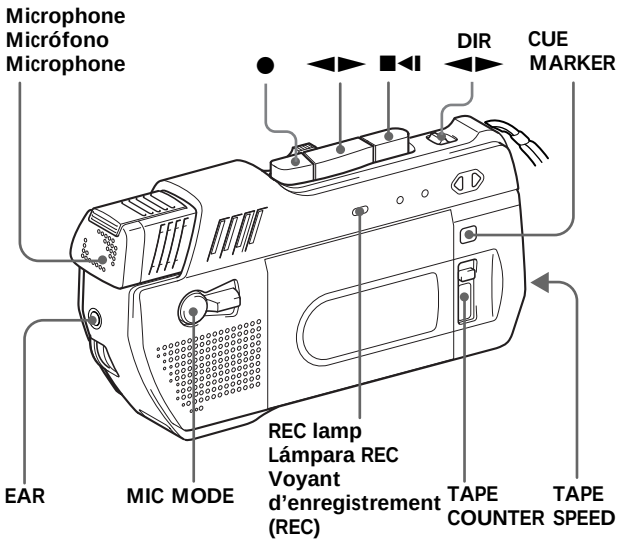
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

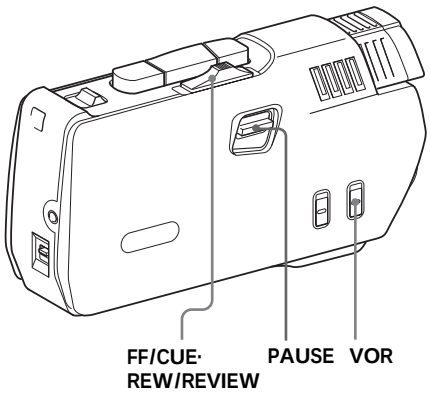
Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SECTION 1
GENERAL

This section is extracted from instruction manual.





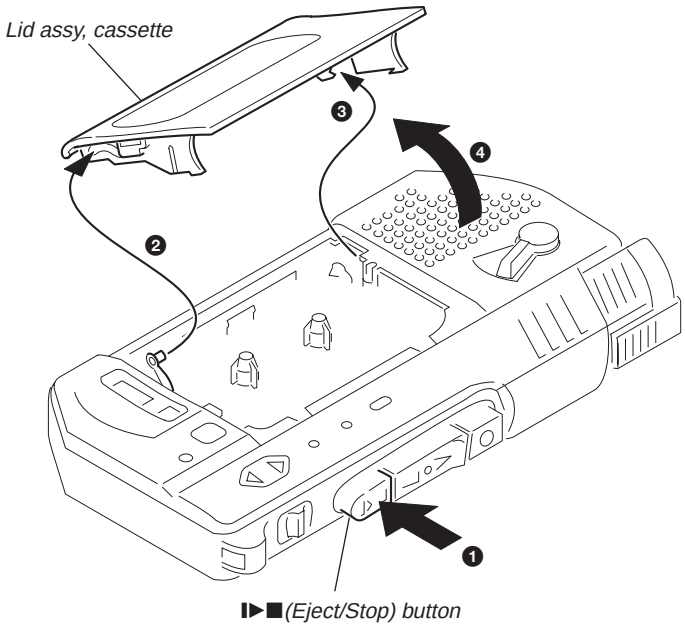
SECTION 2
DISASSEMBLY

• The equipment can be removed using the following procedure.

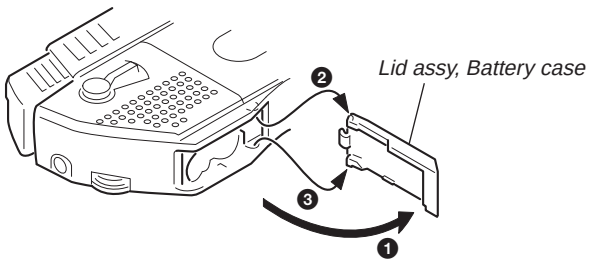
Set → *Lid assy, cassette* / *Lid assy, battery case* → *Cabinet (rear) assy* → *Main board* → *Microphone, built-in C-2038 set* → *Speaker, LED board* → *Mechanism deck* → *Head, ceramic (HRPE901,902)*

Note : Follow the disassembly procedure in the numerical order given.

2-1. LID ASSY, CASSETTE

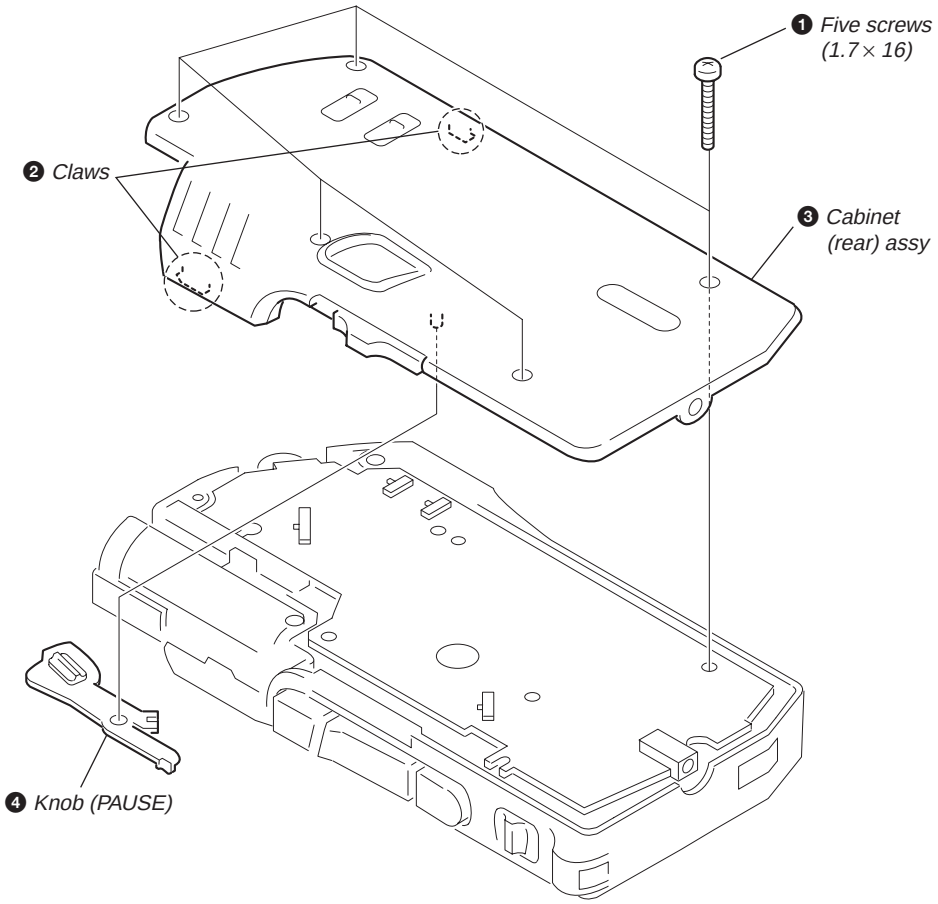


2-2. LID ASSY, BATTERY CASE

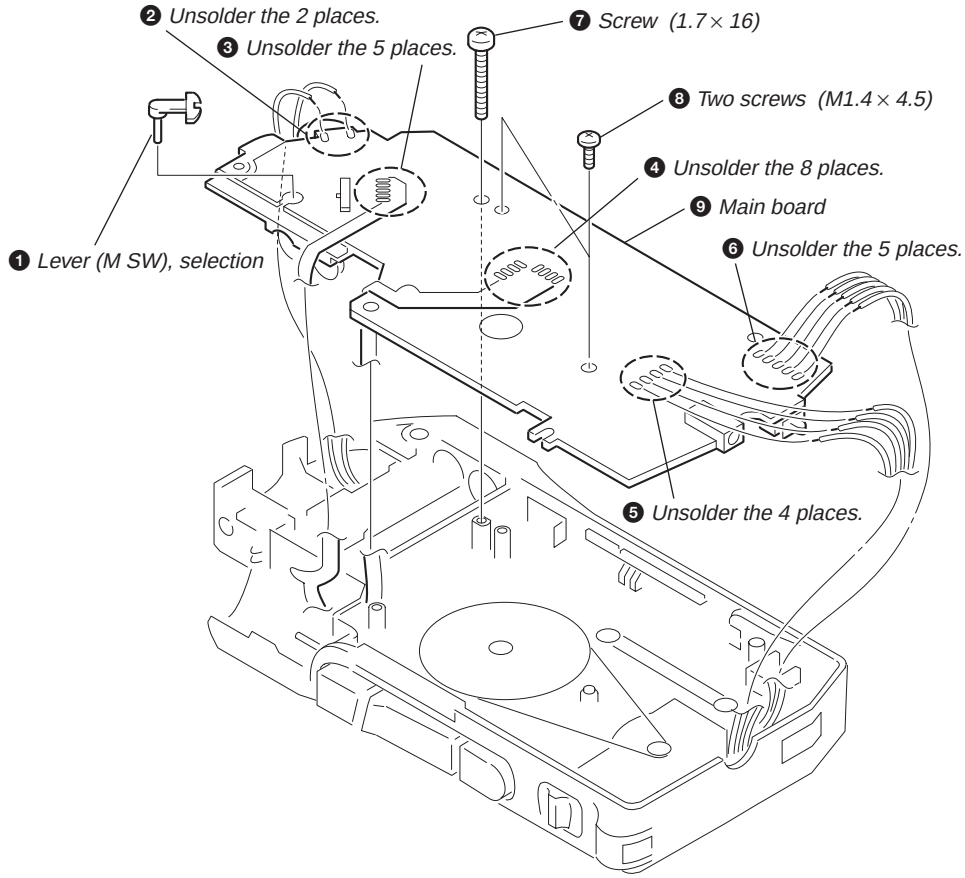


2-3. CABINET (REAR) ASSY

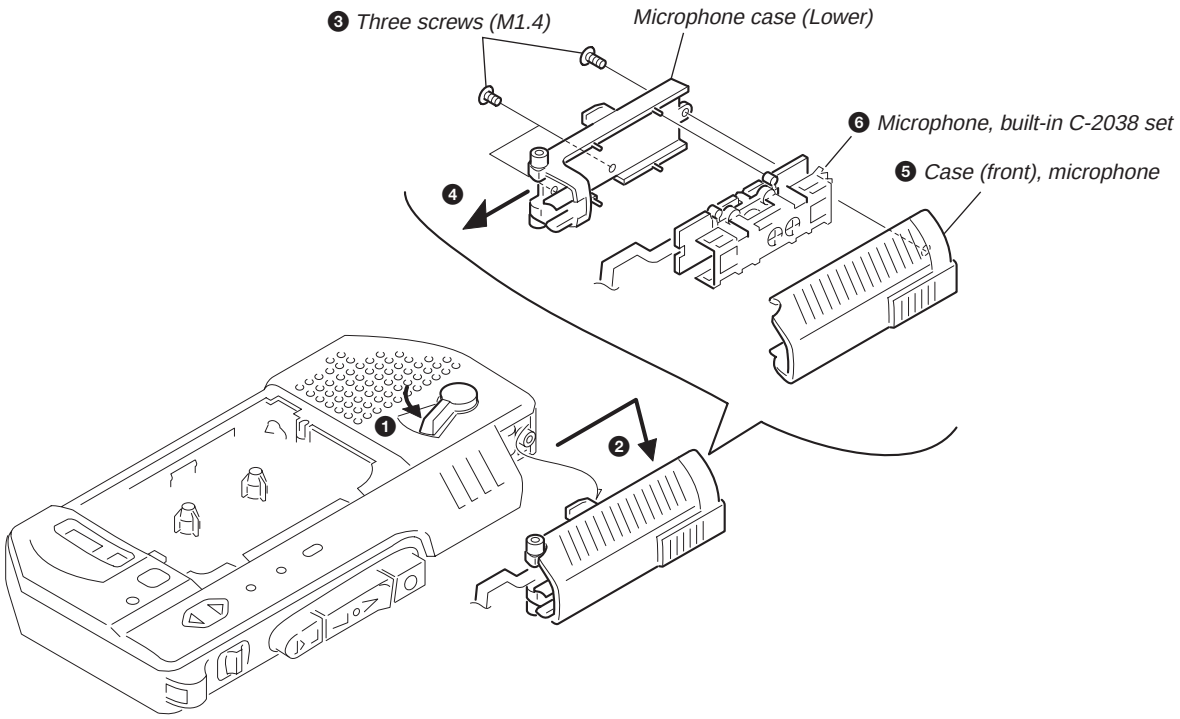
Note : When installing, fit the knobs and switches.



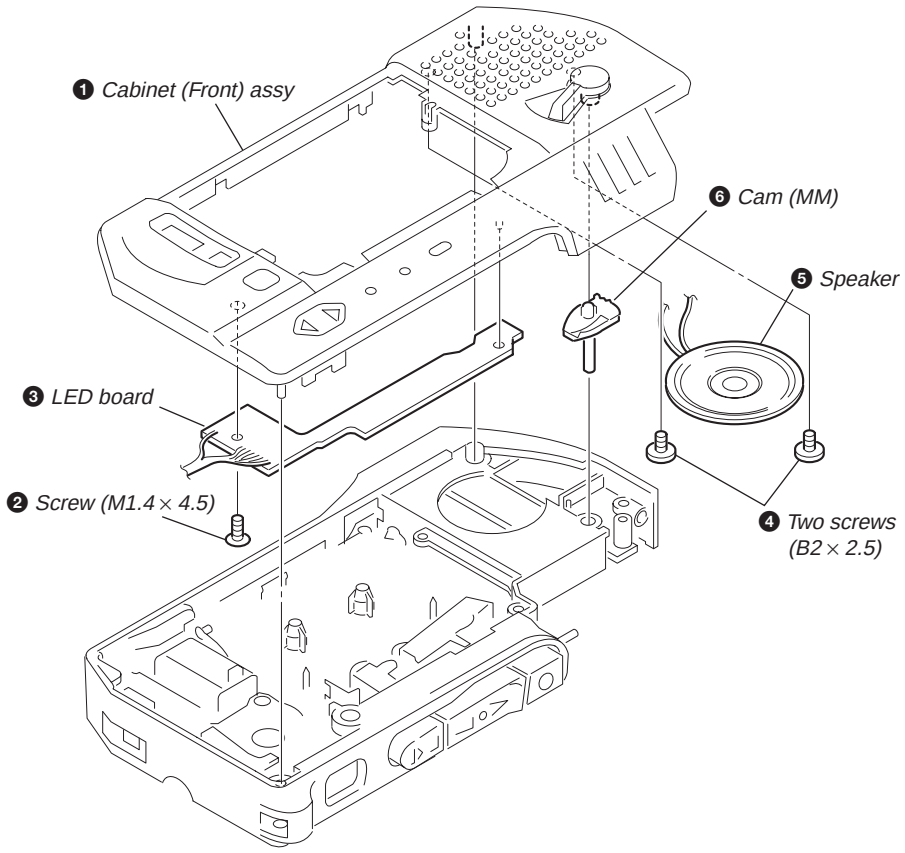
2-4. MAIN BOARD


❷ Unsolder the 2 places.
❸ Unsolder the 5 places.
❼ Screw (1.7× 16)
❽ Two screws (M1.4× 4.5)
❹ Unsolder the 8 places.
❾ Main board
❻ Unsolder the 5 places.
❶ Lever (M SW), selection
❺ Unsolder the 4 places.

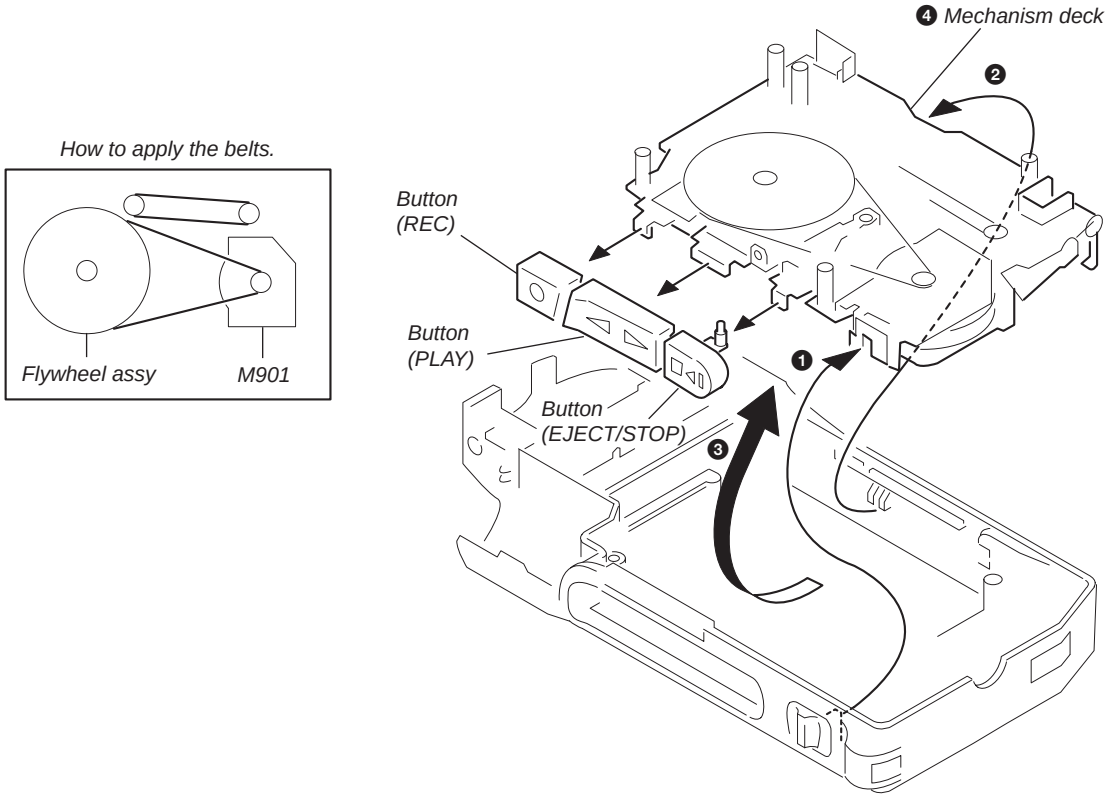
2-5. MICROPHONE, BUILT-IN C-2038 SET



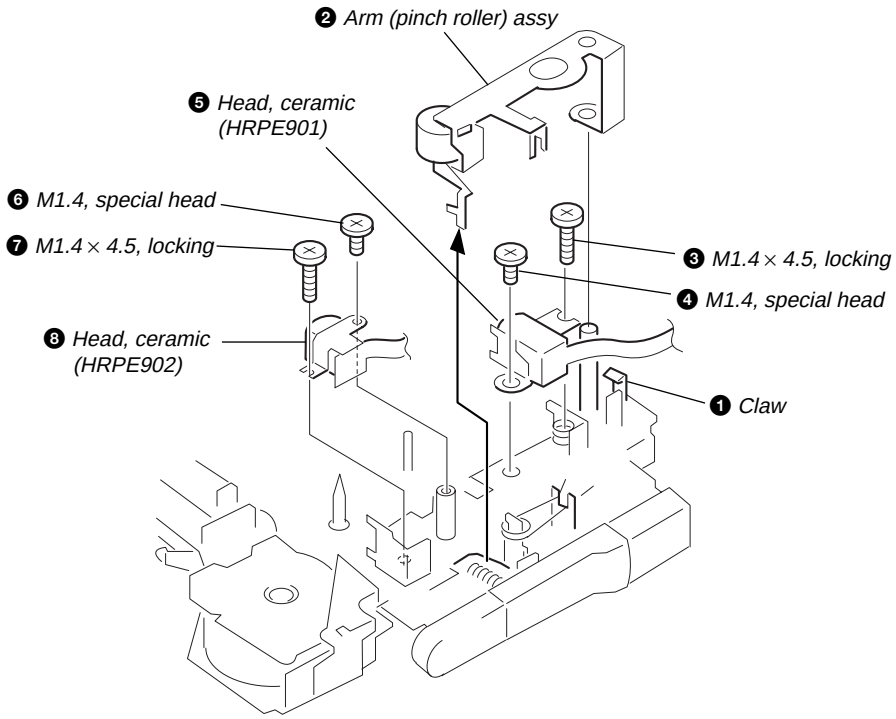
2-6. SPEAKER, LED BOARD



2-7. MECHANISM DECK



2-8. HEAD, CERAMIC (HRPE901, 902)


❷ Arm (pinch roller) assy
❺ Head, ceramic (HRPE901)
❻ M1.4, special head
❼ M1.4 × 4.5, locking
❽ Head, ceramic (HRPE902)
❸ M1.4 × 4.5, locking
❹ M1.4, special head
❶ Claw

SECTION 3
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab :
   record/playback/erase head pinch roller
   rubber belts capstan
2. Demagnetize the record/playback/erase head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
   Power supply voltage : 3 Vdc
   TAPE SPEED switch : 2.4cm

Torque Measurement

Mode	Torque Meter	Meter Reading
Forward	CQ-102M	0.49 – 0.98 mN • m (0.07 to 0.140 oz • inch)
Reverse	CQ-102MR	0.49 – 0.98 mN • m (0.07 to 0.140 oz • inch)
Fast Forward	CQ-201M	more than 2.94 mN • m (more than 0.42 oz • inch)
Rewind	CQ-201M	more than 2.94 mN • m (more than 0.42 oz • inch)

Tape Tension Measurement

Mode	Tension Meter	Meter Reading
Forward	CQ-403M	more than 25 g (more than 0.35 oz)
Reverse	CQ-403MR	more than 25 g (more than 0.35 oz)

SECTION 4
ELECTRICAL ADJUSTMENTS

Test Tape

Type	Signal	Used for	Tape Speed (cm/s)
S-2-A030A	3 kHz, – 20 dB	Head Azimuth Adjustment	2.4
WS-24	3 kHz, – 10 dB	Tape Speed Adjustment	1.2/2.4

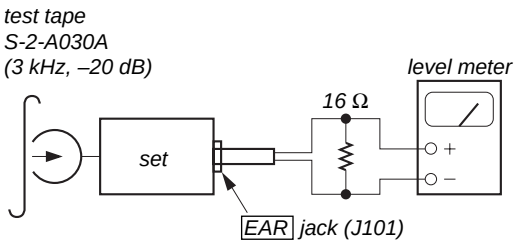
Record/Playback/Erase Head Azimuth Adjustment

Setting:

VOL control : mechanical mid
TAPE SPEED switch : 2.4cm/s
VOR switch : OFF
FAST PB switch : OFF

Procedure:

1. Mode : Playback

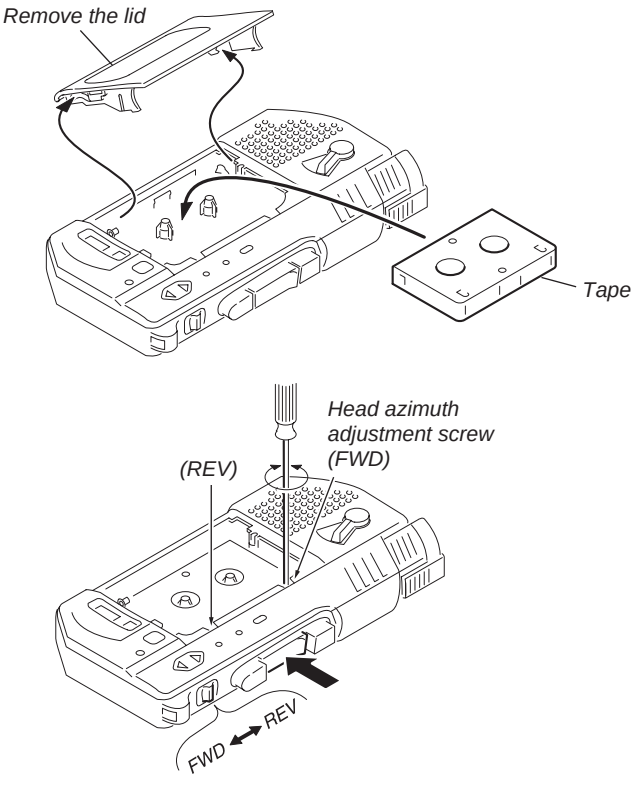


2. Turn the adjustment screw to obtain the maximum reading on level meter.

Note: Several peaks may appear, but the maximum.

Adjustment Location :

First remove the lid.



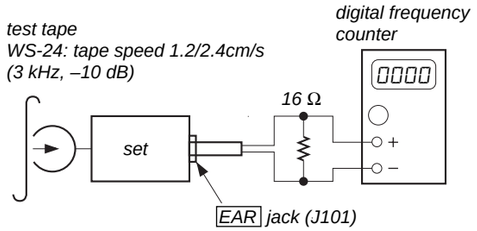
Tape Speed Adjustment

Setting:

VOL	control	: mechanical mid
VOR	switch	: OFF
FAST PB	switch	: OFF

Procedure:

- Reform 2.4 cm/s speed adjustment before 1.2 cm/s speed adjustment mode : playback



1. Tape Speed : 2.4 cm/s
   Playback WS-24 (tape center part) and adjust RV601 so that reading on the digital frequency counter becomes 3,000 Hz.

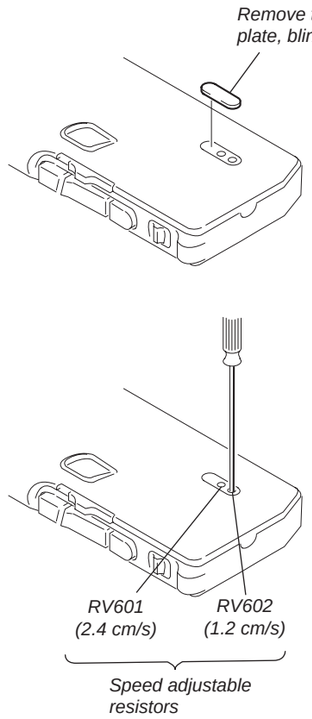
2. Tape Speed : 1.2 cm/s
   Playback WS-24 (tape center part) and adjust RV602 so that reading on the digital frequency counter becomes 1,500 Hz.

Specification Value:

Tape Speed	Frequency counter
1.2 cm/s	1,455 to 1,545 Hz
2.4 cm/s	2,910 to 3,090 Hz

Frequency difference between the beginning and the end of the tape should be within ±0.5%.

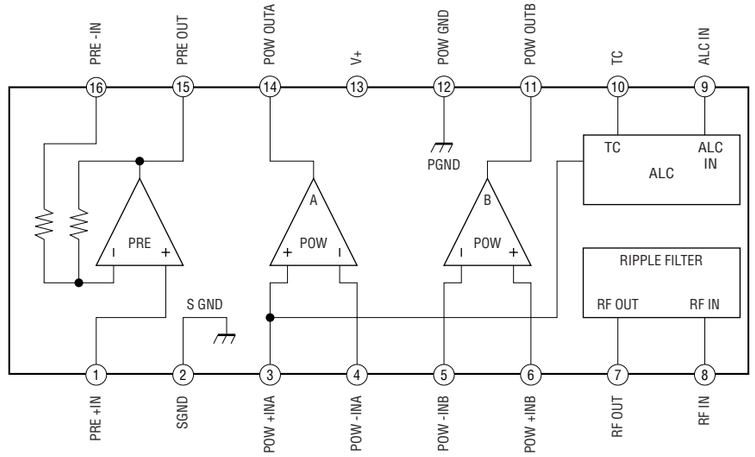
Adjustment Location :
First remove the plate, blind.



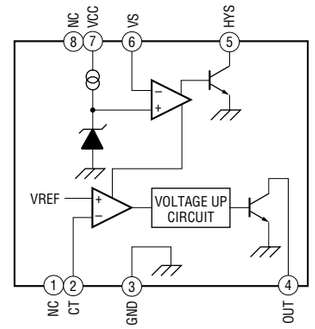
SECTION 5
DIAGRAMS

- **IC Block Diagrams**

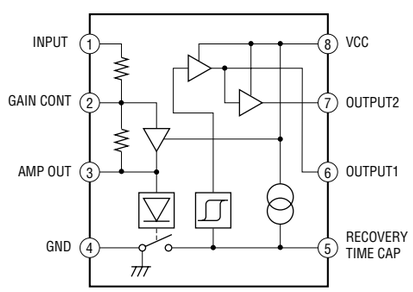
IC101 NJM2775



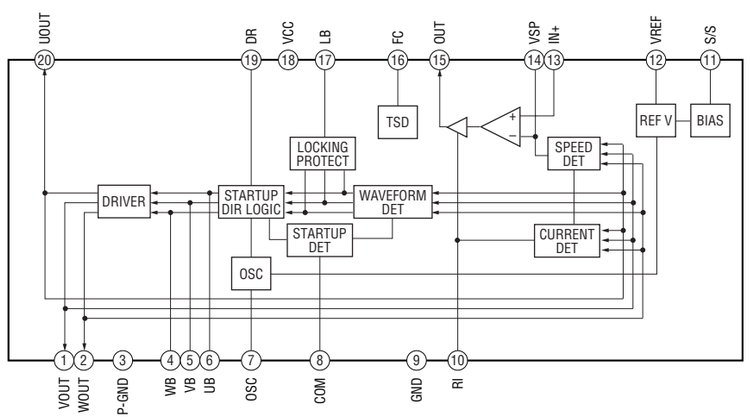
IC401 MM1251M



IC501 NJM2072M

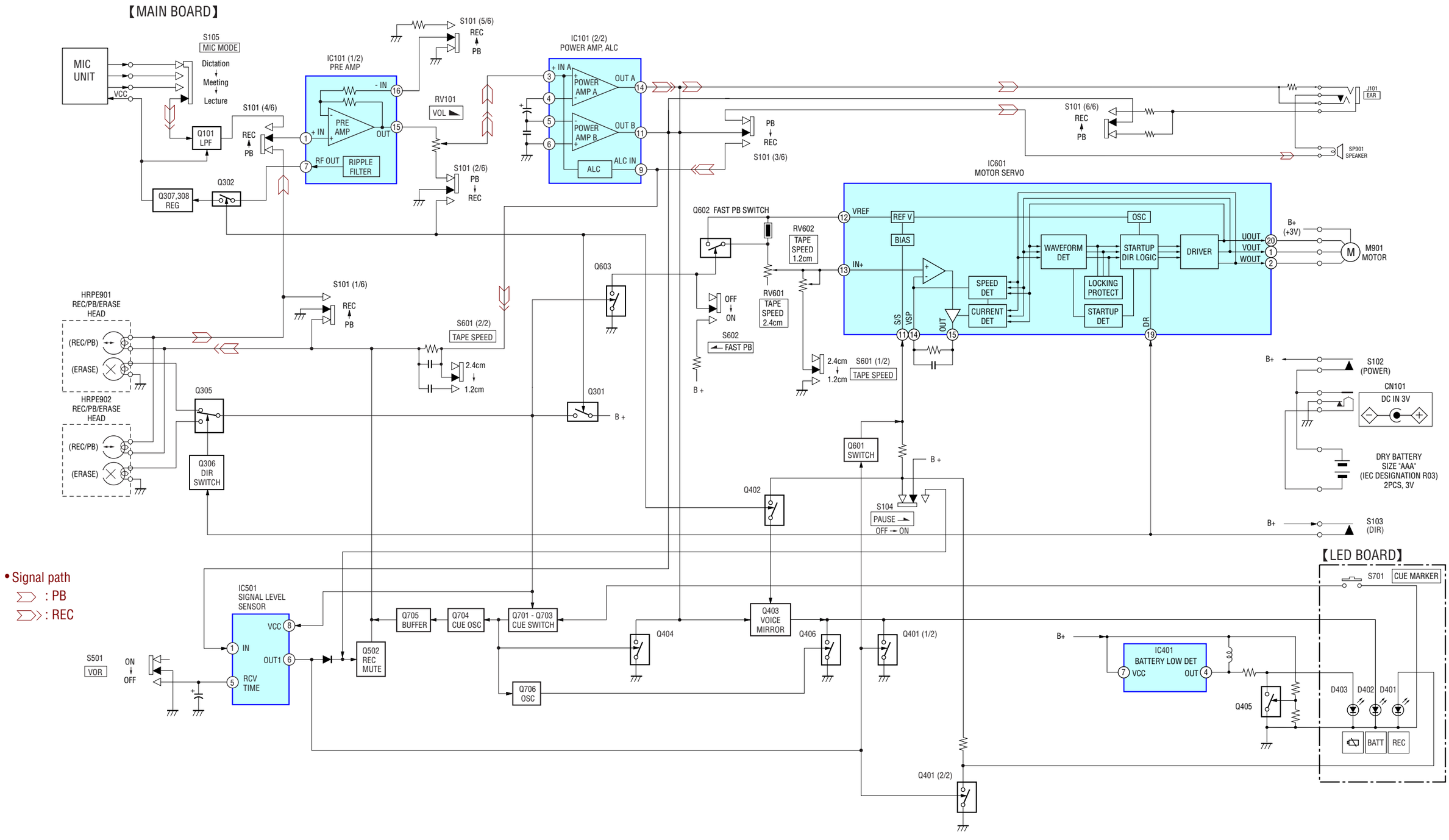


IC601 LB1877V



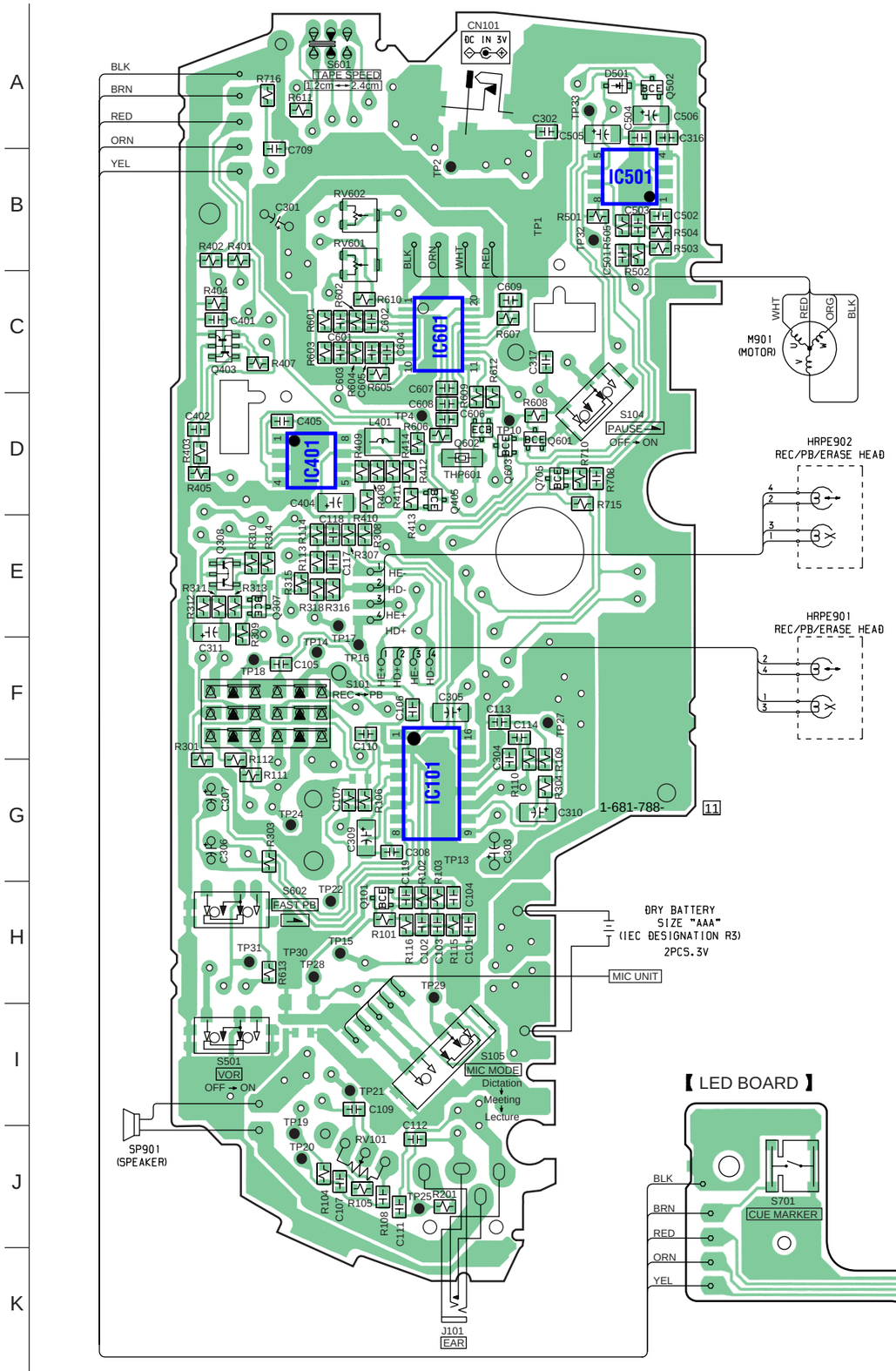
M-200MC

5-1. BLOCK DIAGRAM

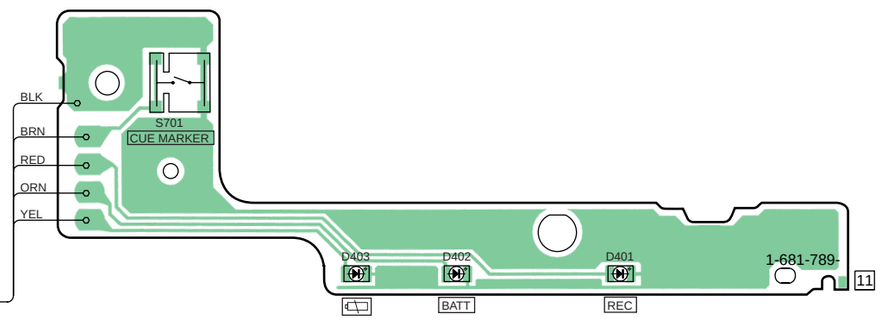


5-2. PRINTED WIRING BOARD

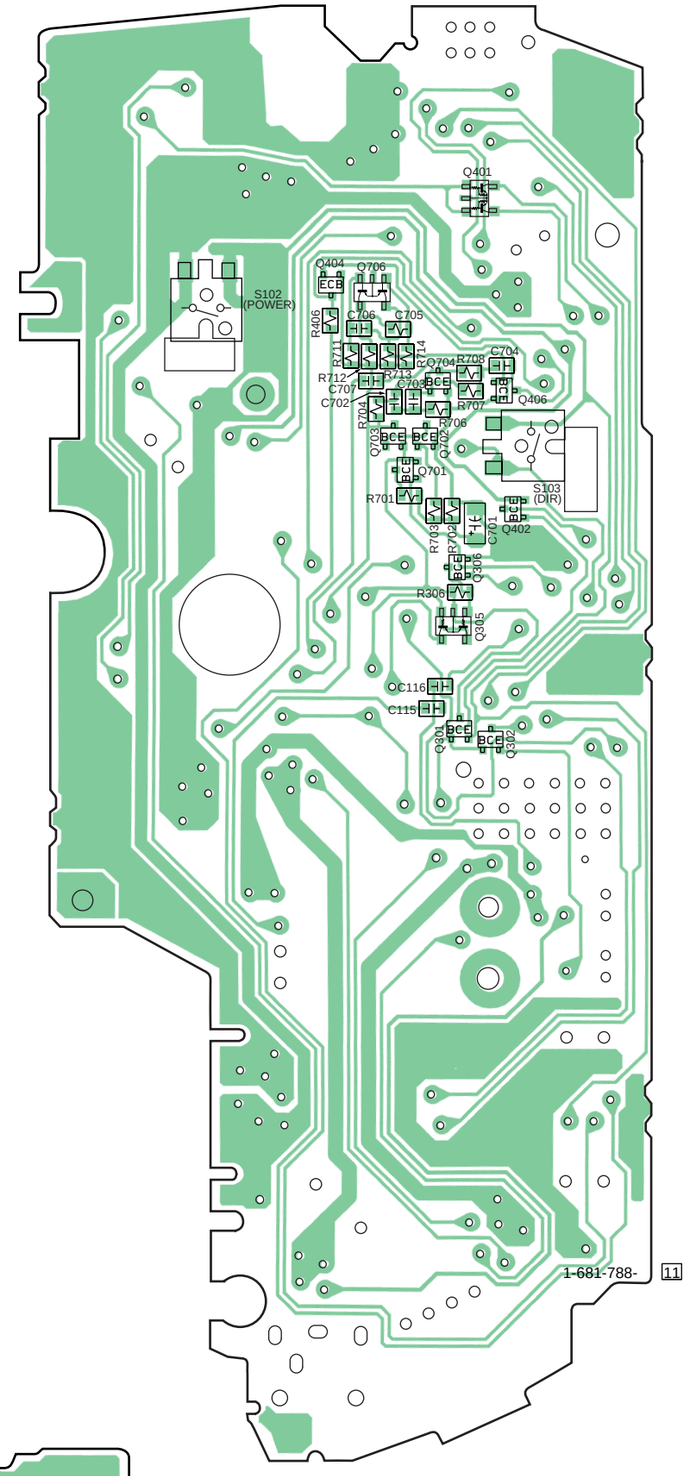
【 MAIN BOARD 】(SIDE B)



【 LED BOARD 】



【 MAIN BOARD 】(SIDE A)



• **Semiconductor Location**

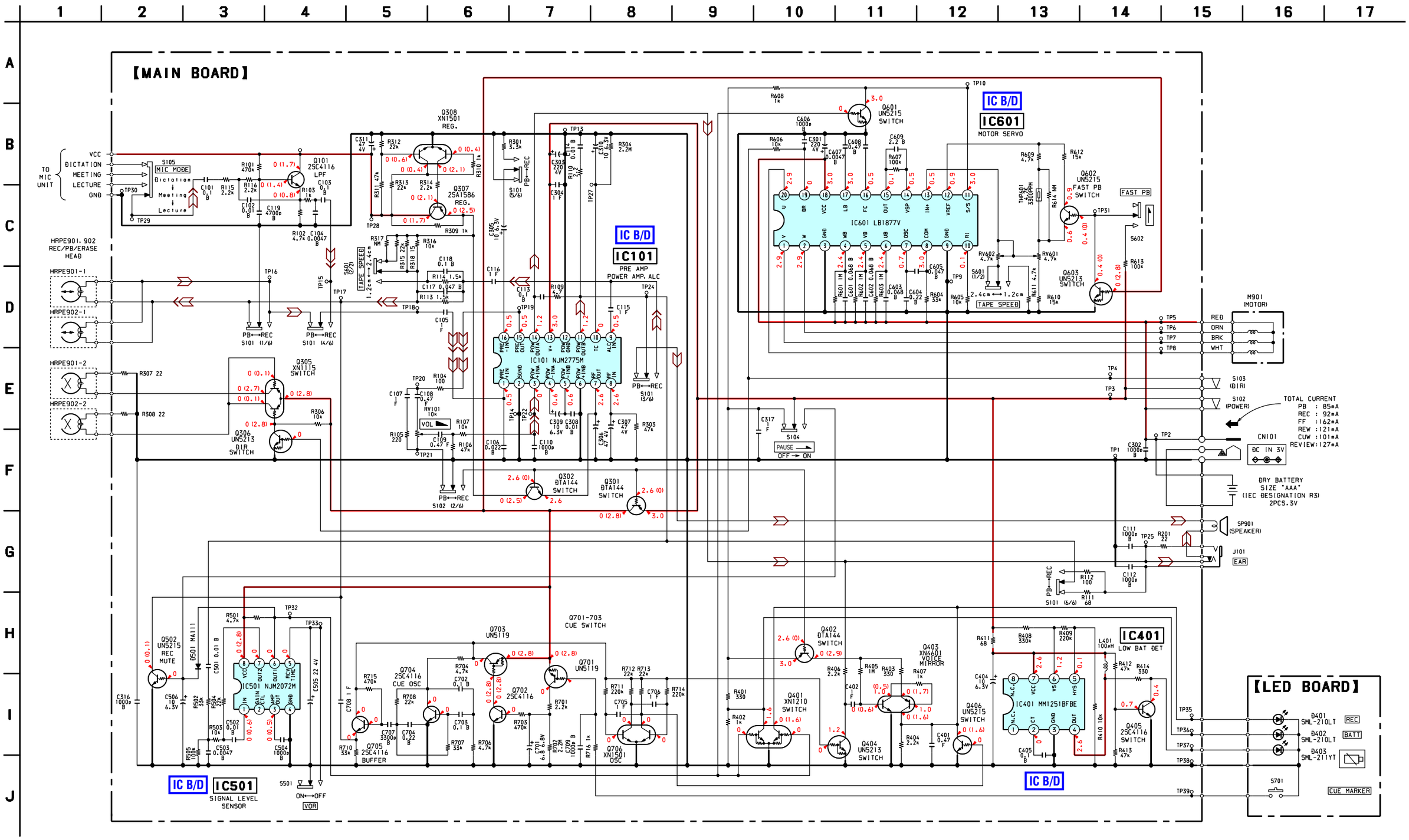
Ref. No.	Location
D401	K-10
D402	K-9
D403	K-8
D501	A-5
IC101	G-4
IC401	D-3
IC501	B-5
IC601	C-4
Q101	H-3
Q301	F-14
Q302	F-14
Q305	E-14
Q306	D-14
Q307	E-2
Q308	E-2
Q401	B-14
Q402	D-14
Q403	C-2
Q404	B-13
Q405	D-4
Q406	C-14
Q502	A-6
Q601	D-5
Q602	D-4
Q603	D-4
Q701	D-13
Q702	C-14
Q703	C-13
Q704	C-14
Q705	D-5
Q706	B-13

Caution:
Pattern face side: (SIDE B) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (SIDE A) Parts on the parts face side seen from the parts face are indicated.

Note:
- ——○—— : parts extracted from the component side.
- ○ : Through hole.
- ▒▒▒ : Pattern from the side which enables seeing.

5-3. SCHEMATIC DIAGRAM

• Refer to page 9 for IC Block Diagrams.



Note:

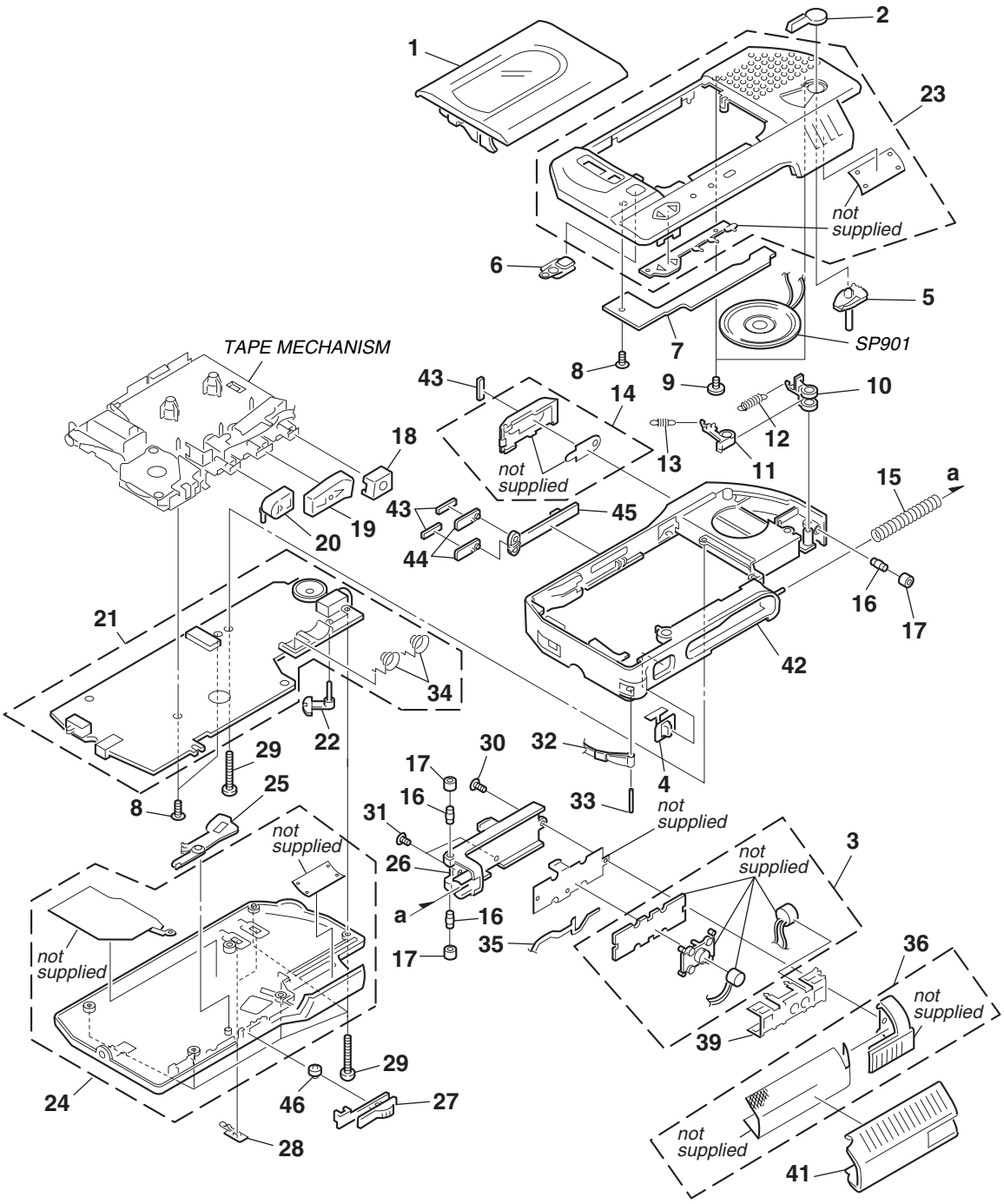
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ▭ : panel designation.
- ▬ : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 3 V and fed with regulated dc power supply from battery terminal.
- Voltage is dc with respect to ground under no-signal condition.
  no mark : PB
  ( ) : REC
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : PB
  : REC

SECTION 6
EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
  CND : Canadian model
  CH : Chinese model
  1E : No indication of country of origin

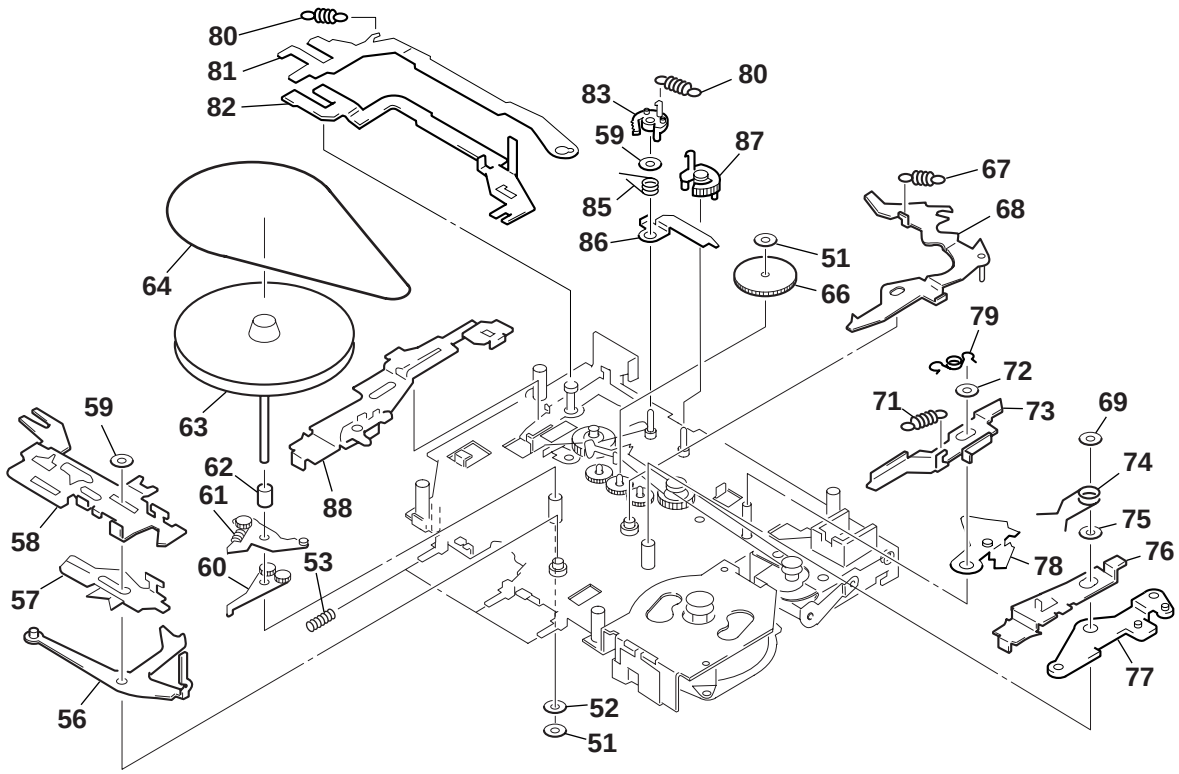
6-1. CABINET SECTION



Ref. No.	Part No.	Description	Remarks
1	X-3380-874-1	LID ASSY, CASSETE	
2	3-231-226-01	KNOB (MM)	
3	8-810-170-90	MICROPHONE,BUILT-IN C-2038 SET	
4	3-231-223-01	KNOB (DIR)	
5	3-231-227-01	CAM (MM)	
6	3-231-224-01	BUTTON (CUE)	
* 7	1-681-789-11	LED BOARD	
8	3-704-197-71	SCREW (M1.4X4.5), LOCKING	
9	3-034-792-01	SCREW, TAPPING (B2.0)	
10	3-231-229-01	LEVER, CLICK	
11	3-231-228-01	LEVER (MC), LOCK	
12	3-231-238-01	SPRING (CLICK), TENSION	
13	3-231-237-01	SPRING (M LOCK), TENSION	
14	X-3380-872-1	LID ASSY, BATTERY CASE	
15	3-231-242-01	SPRING (MC), COMPRESSION	
16	3-233-518-01	CUSHION (MC) (B)	
17	3-231-214-01	CAP (MC)	
18	3-231-222-01	BUTTON (REC)	
19	3-231-221-01	BUTTON (PLAY)	
20	3-231-220-01	BUTTON (STOP)	
* 21	A-3021-445-A	MAIN BOARD, COMPLETE	
22	3-231-230-01	LEVER (M SW), SELECTION	
23	X-3380-875-1	CABINET (FRONT) ASSY	

Ref. No.	Part No.	Description	Remarks
24	X-3380-876-1	CABINET (REAR) ASSY (US,CND,AEP,E,CH)	
24	X-3380-877-1	CABINET (REAR) (1E) ASSY (1E)	
25	3-231-216-01	KNOB (PAUSE)	
26	3-231-209-01	CASE (LOWER), MICROPHONE	
27	3-231-218-01	KNOB (FR)	
28	3-231-217-01	KNOB (VOR)	
29	3-035-255-11	SCREW (1.7X16)	
30	4-963-883-71	SCREW (M1.4), PRECISION PAN	
31	4-963-883-32	SCREW (M1.4), PRECISION PAN	
32	3-328-319-01	STRAP, HAND	
33	3-669-481-07	PIN (DIA.1X10), PARALLEL	
34	3-231-235-01	SPRING, BATTERY COIL	
35	1-681-790-11	MICROPHONE FLEXIBLE BOARD	
36	X-3380-873-1	CASE(UPPER)ASSY,MICROPHONE	
39	3-231-240-01	REINFORCEMENT(MICROPHONE CASE)	
41	3-231-211-01	CASE (FRONT), MICROPHONE	
42	3-231-197-01	CABINET (BELT)	
43	3-231-241-01	FOOT (ST), RUBBER	
44	3-231-231-01	FOOT (ST)	
45	3-231-233-01	KNOB (ST)	
46	3-231-219-01	ROLLER (FR)	
SP901	1-544-859-11	SPEAKER (2.8CM)	

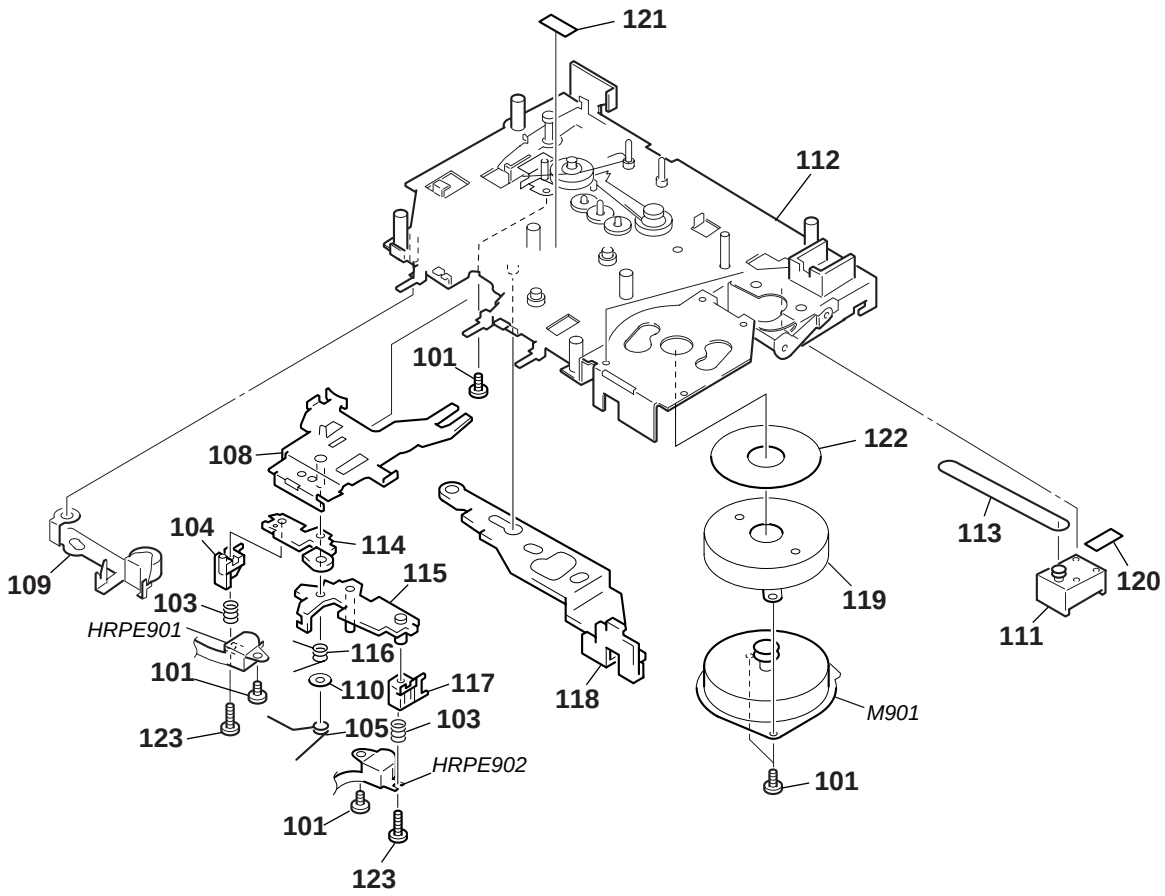
6-2. MECHANISM DECK (1)



Ref. No.	Part No.	Description	Remarks
51	3-331-007-21	WASHER	
52	3-350-989-01	WASHER	
53	3-028-961-01	SPRING (BUTTON), COMPRESSION	
56	3-046-281-01	LEVER (POWER SW) (B)	
57	3-028-940-01	LEVER (SRS)	
58	3-028-938-01	LEVER (SLIDE)	
59	3-578-224-00	WASHER	
60	X-3376-227-1	LEVER (F/R) ASSY	
61	X-3380-859-1	LEVER (TU) (B) ASSY	
62	3-029-634-01	BEARING	
63	X-3376-231-1	FLYWHEEL ASSY	
64	3-377-420-11	BELT	
66	X-3376-230-1	LIMITTER ASSY	
67	3-028-955-01	SPRING (LOCK), TENSION	
68	X-3378-034-1	LEVER (LOCK) ASSY (RVS)	
69	3-321-813-61	WASHER, COTTER POLYETHYLENE	
71	3-028-954-01	SPRING (SW LEVER), TENSION	

Ref. No.	Part No.	Description	Remarks
72	3-321-813-71	WASHER, COTTER POLYETHYLENE	
73	3-028-928-01	LEVER (EJECT)	
74	3-028-964-01	SPRING (SLIDE), TORSION	
75	4-926-562-01	WASHER, STOPPER	
76	3-028-927-01	LEVER (STOP)	
77	X-3378-643-1	LEVER (REVERSE SW) ASSY	
78	X-3376-236-1	LEVER (CLAW DETECTION R) ASSY	
79	3-029-635-01	SPRING (LEVER DIR), TORSION	
80	3-039-284-02	SPRING (CLAW DETECTION R) (B)	
81	3-028-932-01	LEVER (JOINT)	
82	3-028-933-01	LEVER (DIR)	
83	3-028-905-01	GEAR (S-OFF), CAM	
85	3-028-942-01	SPRING (D-LOCK), TORSION	
86	3-028-941-01	LEVER (DIR-LOCK)	
87	3-028-906-01	GEAR (REVERSE), CAM	
88	X-3376-224-1	LEVER (REC) ASSY	

6-3. MECHANISM DECK (2)



Ref. No.	Part No.	Description	Remarks
101	3-704-197-01	SCREW (M1.4), SPECIAL HEAD	
103	3-028-960-01	SPRING (AZIMUTH), COMPRESSION	
104	3-028-909-01	GUIDE (N), TAPE	
105	3-028-965-01	SPRING (PINCH ARM), TORSION	
108	X-3376-232-1	LEVER (PLAY) ASSY	
109	X-3376-235-1	ARM (PINCH ROLLER) ASSY	
110	3-578-224-00	WASHER	
111	1-548-579-41	COUNTER, TAPE (SMALL TYPE)	
112	X-3380-834-1	CHASSIS (COMP) ASSY (R)	
113	3-343-948-01	BELT	
114	3-028-922-01	BRACKET (N), HEAD	
115	X-3376-234-1	BRACKET (R) ASSY, HEAD	

Ref. No.	Part No.	Description	Remarks
116	3-028-962-01	SPRING, TORSION	
117	3-028-910-01	GUIDE (R), TAPE	
118	3-028-921-01	LEVER (HEAD ROTARY)	
119	3-231-239-01	BRACKET (B), MOTOR	
120	3-365-053-01	SHEET (BA), ADHESIVE	
121	3-378-078-11	SPACER (END DETECTION)	
122	3-231-248-01	CUSHION (MOTOR)	
123	3-704-197-71	SCREW (M1.4X4.5), LOCKING	
M901	1-763-236-11	MOTOR, DC	
HRPE901	1-500-593-11	HEAD, CERAMIC (REC/PB/ERASE)	
HRPE902	1-500-594-11	HEAD, CERAMIC (REC/PB/ERASE)	

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: µF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...
- Abbreviation
  CND : Canadian model
  CH : Chinese model
  1E : No indication of country of origin

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description			Remarks
*	A-3021-445-A	MAIN BOARD, COMPLETE			
		**********			
	3-231-235-01	SPRING, BATTERY COIL			
	3-231-246-01	ORNAMENT, JACK			
	3-231-247-01	SHEET (PC BOARD), INSULATING			
	3-380-902-21	SPACER (FR)			
		< CAPACITOR >			
C101	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V
C102	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C103	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V
C104	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C105	1-115-156-11	CERAMIC CHIP	1uF		10V
C106	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C107	1-115-156-11	CERAMIC CHIP	1uF		10V
C108	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C109	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C110	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C111	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C112	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C113	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V
C114	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C115	1-115-156-11	CERAMIC CHIP	1uF		10V
C116	1-115-156-11	CERAMIC CHIP	1uF		10V
C117	1-165-176-11	CERAMIC CHIP	0.047uF	10.00%	16V
C118	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V
C119	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C301	1-124-576-11	ELECT	220uF	20%	4V
C302	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C303	1-124-576-11	ELECT	220uF	20%	4V
C304	1-115-156-11	CERAMIC CHIP	1uF		10V
C305	1-135-259-11	TANTAL. CHIP	10uF	20.00%	6.3V
C306	1-104-400-11	ELECT	47uF	20.00%	4V
C307	1-104-400-11	ELECT	47uF	20.00%	4V
C308	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C309	1-135-259-11	TANTAL. CHIP	10uF	20.00%	6.3V
C310	1-135-259-11	TANTAL. CHIP	10uF	20.00%	6.3V
C311	1-131-862-11	TANTAL. CHIP	47uF	20%	4V
C316	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C317	1-115-156-11	CERAMIC CHIP	1uF		10V
C401	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C402	1-115-156-11	CERAMIC CHIP	1uF		10V
C404	1-135-259-11	TANTAL. CHIP	10uF	20.00%	6.3V
C405	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V
C501	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C502	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C503	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C504	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C505	1-104-847-11	TANTAL. CHIP	22uF	20.00%	4V
C506	1-135-259-11	TANTAL. CHIP	10uF	20.00%	6.3V
C601	1-110-563-11	CERAMIC CHIP	0.068uF	10.00%	16V
C602	1-110-563-11	CERAMIC CHIP	0.068uF	10.00%	16V
C603	1-110-563-11	CERAMIC CHIP	0.068uF	10.00%	16V
C604	1-115-467-11	CERAMIC CHIP	0.22uF	10.00%	10V
C605	1-165-176-11	CERAMIC CHIP	0.047uF	10.00%	16V
C606	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C607	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C608	1-117-863-11	CERAMIC CHIP	0.47uF	10.00%	6.3V
C609	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V
C701	1-135-211-11	TANTAL. CHIP	6.8uF	20.00%	6.3V
C702	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V
C703	1-107-826-11	CERAMIC CHIP	0.1uF	10.00%	16V
C704	1-115-467-11	CERAMIC CHIP	0.22uF	10.00%	10V
C705	1-115-156-11	CERAMIC CHIP	1uF		10V
C706	1-115-156-11	CERAMIC CHIP	1uF		10V
C707	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C708	1-115-156-11	CERAMIC CHIP	1uF		10V
C709	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
		< CONNECTOR >			
CN101	1-779-080-11	JACK,DC(POLARITY UNIFIED TYPE) (DC IN 3V)			
		< DIODE >			
D501	8-719-073-01	DIODE MA111-TX			
		< IC >			
IC101	8-759-682-35	IC NJM2775M-TE2			
IC401	8-759-399-49	IC MM1251BFBE			
IC501	8-759-701-51	IC NJM2072M			
IC601	8-759-566-10	IC LB1877V-TLM			
		< JACK >			
J101	1-766-847-11	JACK (EAR)			
		< COIL >			
L401	1-414-404-11	INDUCTOR	100uH		
		< TRANSISTOR >			
Q101	8-729-230-63	TRANSISTOR	2SC4116YG-TE85L		
Q301	8-729-028-92	TRANSISTOR	DTA144TUA-T106		
Q302	8-729-028-92	TRANSISTOR	DTA144TUA-T106		
Q305	8-729-403-45	TRANSISTOR	XN1115-TX		
Q306	8-729-402-42	TRANSISTOR	UN5213-TX		

MAIN

Ref. No.	Part No.	Description			Remarks
Q307	8-729-230-60	TRANSISTOR	2SA1586YG-TE85L		
Q308	8-729-402-13	TRANSISTOR	XN1501-TX		
Q401	8-729-022-66	TRANSISTOR	XN1210-TX		
Q402	8-729-028-92	TRANSISTOR	DTA144TUA-T106		
Q403	8-729-402-84	TRANSISTOR	XN4601-TX		
Q404	8-729-402-42	TRANSISTOR	UN5213-TX		
Q405	8-729-230-63	TRANSISTOR	2SC4116YG-TE85L		
Q406	8-729-420-50	TRANSISTOR	UN5215-(TX)		
Q502	8-729-420-50	TRANSISTOR	UN5215-(TX)		
Q601	8-729-420-50	TRANSISTOR	UN5215-(TX)		
Q602	8-729-420-50	TRANSISTOR	UN5215-(TX)		
Q603	8-729-402-42	TRANSISTOR	UN5213-TX		
Q701	8-729-425-22	TRANSISTOR	UN5119-TX		
Q702	8-729-230-63	TRANSISTOR	2SC4116YG-TE85L		
Q703	8-729-425-22	TRANSISTOR	UN5119-TX		
Q704	8-729-230-63	TRANSISTOR	2SC4116YG-TE85L		
Q705	8-729-230-63	TRANSISTOR	2SC4116YG-TE85L		
Q706	8-729-402-13	TRANSISTOR	XN1501-TX		
		< RESISTOR >			
R101	1-216-853-11	METAL CHIP	470K	5%	1/16W
R102	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R103	1-216-821-11	METAL CHIP	1K	5%	1/16W
R104	1-216-809-11	METAL CHIP	100	5%	1/16W
R105	1-216-813-11	METAL CHIP	220	5%	1/16W
R106	1-216-841-11	METAL CHIP	47K	5%	1/16W
R107	1-216-833-11	METAL CHIP	10K	5%	1/16W
R109	1-216-793-11	RES-CHIP	4.7	5%	1/16W
R110	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R111	1-216-807-11	METAL CHIP	68	5%	1/16W
R112	1-216-809-11	METAL CHIP	100	5%	1/16W
R113	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R114	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R115	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R116	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R201	1-216-801-11	METAL CHIP	22	5%	1/16W
R301	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R303	1-216-841-11	METAL CHIP	47K	5%	1/16W
R304	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R306	1-216-833-11	METAL CHIP	10K	5%	1/16W
R307	1-216-801-11	METAL CHIP	22	5%	1/16W
R308	1-216-801-11	METAL CHIP	22	5%	1/16W
R309	1-216-821-11	METAL CHIP	1K	5%	1/16W
R310	1-216-821-11	METAL CHIP	1K	5%	1/16W
R311	1-216-841-11	METAL CHIP	47K	5%	1/16W
R312	1-216-837-11	METAL CHIP	22K	5%	1/16W
R313	1-216-837-11	METAL CHIP	22K	5%	1/16W
R314	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R315	1-216-837-11	METAL CHIP	22K	5%	1/16W
R316	1-216-833-11	METAL CHIP	10K	5%	1/16W
R318	1-216-835-11	METAL CHIP	15K	5%	1/16W
R401	1-216-815-11	METAL CHIP	330	5%	1/16W
R402	1-216-821-11	METAL CHIP	1K	5%	1/16W
R403	1-216-815-11	METAL CHIP	330	5%	1/16W
R404	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R405	1-216-857-11	METAL CHIP	1M	5%	1/16W
R406	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R407	1-216-821-11	METAL CHIP	1K	5%	1/16W
R408	1-216-851-11	METAL CHIP	330K	5%	1/16W
R409	1-216-849-11	METAL CHIP	220K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R410	1-216-833-11	METAL CHIP	10K	5%	1/16W
R411	1-216-807-11	METAL CHIP	68	5%	1/16W
R412	1-216-841-11	METAL CHIP	47K	5%	1/16W
R413	1-216-841-11	METAL CHIP	47K	5%	1/16W
R414	1-216-815-11	METAL CHIP	330	5%	1/16W
R501	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R502	1-216-839-11	METAL CHIP	33K	5%	1/16W
R503	1-216-833-11	METAL CHIP	10K	5%	1/16W
R504	1-216-837-11	METAL CHIP	22K	5%	1/16W
R505	1-216-845-11	METAL CHIP	100K	5%	1/16W
R601	1-216-857-11	METAL CHIP	1M	5%	1/16W
R602	1-216-857-11	METAL CHIP	1M	5%	1/16W
R603	1-216-857-11	METAL CHIP	1M	5%	1/16W
R604	1-216-839-11	METAL CHIP	33K	5%	1/16W
R605	1-216-833-11	METAL CHIP	10K	5%	1/16W
R606	1-216-833-11	METAL CHIP	10K	5%	1/16W
R607	1-216-845-11	METAL CHIP	100K	5%	1/16W
R608	1-216-821-11	METAL CHIP	1K	5%	1/16W
R609	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R610	1-216-835-11	METAL CHIP	15K	5%	1/16W
R611	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R612	1-216-835-11	METAL CHIP	15K	5%	1/16W
R613	1-216-845-11	METAL CHIP	100K	5%	1/16W
R701	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R702	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R703	1-216-853-11	METAL CHIP	470K	5%	1/16W
R704	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R706	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R707	1-216-839-11	METAL CHIP	33K	5%	1/16W
R708	1-216-837-11	METAL CHIP	22K	5%	1/16W
R710	1-216-839-11	METAL CHIP	33K	5%	1/16W
R711	1-216-849-11	METAL CHIP	220K	5%	1/16W
R712	1-216-837-11	METAL CHIP	22K	5%	1/16W
R713	1-216-837-11	METAL CHIP	22K	5%	1/16W
R714	1-216-849-11	METAL CHIP	220K	5%	1/16W
R715	1-216-853-11	METAL CHIP	470K	5%	1/16W
R716	1-216-821-11	METAL CHIP	1K	5%	1/16W
		< VARIABLE RESISTOR >			
RV101	1-225-597-11	RES, VAR, CARBON 10K (VOL ◣)			
RV601	1-241-593-11	RES, ADJ, CERMET 4.7K			
RV602	1-241-593-11	RES, ADJ, CERMET 4.7K			
		< SWITCH >			
S101	1-786-177-11	SWITCH, SLIDE (REC/PB)			
S102	1-762-594-41	SWITCH, PUSH (1 KEY) (POWER)			
S103	1-572-688-11	SWITCH, PUSH (1 KEY) (DIR)			
S104	1-572-922-11	SWITCH, SLIDE (PAUSE ▬▶)			
S105	1-786-176-11	SWITCH, SLIDE (MIC MODE)			
S501	1-572-922-11	SWITCH, SLIDE (VOR)			
S601	1-692-298-11	SWITCH, SLIDE (TAPE SPEED)			
S602	1-572-922-11	SWITCH, SLIDE (FAST PB ▬▶)			
		< THERMISTOR(POSITIVE) >			
THP601	1-803-124-11	THERMISTOR, POSITIVE			

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Ref. No.	Part No.	Description	Remarks
*	1-681-789-11	LED BOARD *********	
		< DIODE >	
D401	8-719-059-96	DIODE SML-210LT-T86 (REC)	
D402	8-719-059-96	DIODE SML-210LT-T86 (BATT)	
D403	8-719-057-99	DIODE SML-211YT-T86 (⚠)	
		< SWITCH >	
S701	1-771-138-21	SWITCH, KEY BOARD (CUE MARKER)	
**********			
		MISCELLANEOUS **********	
3	8-810-170-90	MICROPHONE,BUILT-IN C-2038 SET	
35	1-681-790-11	MICROPHONE FLEXIBLE BOARD	
111	1-548-579-41	COUNTER, TAPE (SMALL TYPE)	
M901	1-763-236-11	MOTOR, DC	
SP901	1-544-859-11	SPEAKER (2.8CM)	
HRPE901	1-500-593-11	HEAD, CERAMIC (REC/PB/ERASE)	
HRPE902	1-500-594-11	HEAD, CERAMIC (REC/PB/ERASE)	

Ref. No.	Part No.	Description	Remarks
		ACCESSORIES & PACKING MATERIALS **********	
	3-228-772-11	MANUAL, INSTRUCTION (ENGLISH,SPANISH,FRENCH) (US,CND,AEP,E)	
	3-228-772-21	MANUAL, INSTRUCTION (PORTUGUESE,ITALIAN,DUTCH) (AEP,E)	
	3-228-772-31	MANUAL, INSTRUCTION (GERMAN,SWEDISH,FINNISH) (AEP)	
	3-228-772-41	MANUAL, INSTRUCTION (ENGLISH,CHINESE) (CH)	
	3-228-772-51	MANUAL, INSTRUCTION (ENGLISH,CHINESE) (1E)	
	3-231-249-01	PLATE (SPD), BLIND	

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001.05	New
1.1	2002.01	Cushion (MC) changed for not supplied Change of Part No. for Ref.No.16 (SPM-01060)